

SYSTEM AND METHOD OF PROPAGATING EXCLUSION RECORDS IN A NETWORKED
COMPUTER TELEPHONY INTEGRATION SYSTEM

1 FIELD OF THE INVENTION

2 This invention relates to automated telephone call processing
3 systems and more particularly, to a system and method of
4 propagating exclusion records throughout a plurality of networked,
5 distributed computer telephony integration (CTI) systems so that
6 each system can update a call list that is being utilized in an
7 outgoing telephone call campaign.

8 BACKGROUND OF THE INVENTION

9 Computer automation has found its way into every facet of
10 data processing including telephone call processing systems. For
11 example, since the 1980's, telephone call centers have employed
12 automated systems to increase call center efficiency. Such
13 automated systems include automated call placement systems and
14 automatic call distribution (ACD) systems, which were developed to
15 handle inbound and outbound calls more efficiently and to replace
16 banks of multi-button telephony sets and randomly-handled calls.
17 As call volumes increased, voice response units (VRU) were
18 developed to enable customers using touch-tone telephones to
19 directly interact a call center's host computer.

20 Predictive dialers were developed to automate outbound

1 calling functions. Predictive dialers increased productivity by
2 more than three hundred percent over manual dialing operations by
3 automatically screening out all "no answers", busy signals, and
4 answering machines, and only presented call center agents with
5 live voices.

6 Accordingly, it is now common for organizations who must make
7 and handle large numbers of telephone calls with their customers,
8 such as banks, credit card handling companies and telemarketers,
9 to utilize computerized telephony systems which receive lists of
10 calls to be placed containing customer account information
11 including a telephone number, and which organize, prioritize and
12 control the calling of each customer account in the list.

13 Although such existing telephony systems vary extensively,
14 most systems are capable of receiving call records, organizing
15 them into groups or lists, often prioritizing or ordering the call
16 records within the groups, and providing the call records to a
17 telephone dialing mechanism to be called and subsequently
18 connected to an agent who will handle the call. Along with the
19 prior arts systems, however, come several drawbacks. The first
20 drawback relates to the fact that once a call group or list has
21 been established, many systems are incapable of "adding" to the
22 group dynamically, based on some recent event. In addition, most
23 systems are also not capable of dynamically altering the priority
24 of any given call record within a group once it has been
25 downloaded or prepared for download to the telephone call record
26 processing system. Such a feature is often an important

1 consideration for certain telephone related applications.

2 For example, credit card processing organizations are
3 becoming increasingly aware of the marked rise in fraudulent use
4 of credit cards. Since in many occasions any financial losses
5 from fraudulent use of credit cards may rest on the credit card
6 issuer, the issuer has a significant vested interest in and a
7 strong desire to detect fraudulent use of credit cards and most
8 importantly would like to detect even the potential fraudulent use
9 of a credit card as early as possible, in order to minimize
10 losses.

11 Accordingly, the credit card processing industry has
12 developed a series of "tests" which are applied to credit card
13 usage in an effort to attempt to determine whether a particular
14 credit card is potentially being used fraudulently. For example,
15 one such test includes monitoring the period of time between the
16 date of last use of a credit card and multiple current uses of a
17 credit card. Statistics have shown that if a credit card is not
18 used for an extended period of time and all of a sudden the card
19 is used extensively in a short period of time, chances are that
20 the card has been stolen and is being used fraudulently.

21 Another test or indicator is the amount or value of the
22 charged transaction. Credit card processors can establish profiles
23 of credit cards users including the average charge amount over a
24 period of time and, if a charge amount is received which exceeds
25 this average amount, a potential exists for fraudulent credit card
26 usage.

1 In certain circumstances, some credit card processors even
2 assign a numerical "score" value to a customer's account which
3 "score" reflects the relative potential for the existence of
4 fraudulent use of the credit card. As an example, a "score" value
5 of "1" (one) may indicate only a small potential or likelihood for
6 fraudulent usage while a "score" of "10" (ten) in association
7 with a customer's account may indicate a very high probability of
8 fraudulent usage.

9 In the past, credit card processing organizations have been
10 able to provide groups of customer account records which have been
11 identified as having a potential for fraudulent usage, and have
12 been able to assign such groups to an automated telephone call
13 record processing system for dialing at a later time. Given the
14 real-time access to credit card activity which credit card
15 processors now have, it is therefore often possible to spot
16 potential credit card fraud in a short period of time. Therefore,
17 a customer account which has received a low score in terms of
18 probability of fraud during a call record download based on a
19 prior day credit card activities may receive a very high score for
20 probability of fraudulent credit card usage during the present day
21 as credit card transactions are received by the credit card
22 processor.

23 Given the present limitations in call record processing
24 systems, however, is not possible, in real time, to update an
25 existing customer account call record "score" in a previously
26 downloaded call record list or group to indicate that the relative

1 probability of fraudulent credit card usage has "jumped" from a
2 lower value to a higher value, and to therefore to schedule the
3 call the customer immediately or at least sooner than previously
4 scheduled to verify whether or not the card has been stolen.

5 In the case of many prior art systems, this information will
6 not be downloaded to the call record processing system until the
7 next day, when it may be too late to determine that a credit card
8 has been lost or stolen and to prevent further usage. Similarly,
9 credit card processing activities may, during the middle of the
10 day, indicate potential fraudulent use of a credit card and in
11 this situation, it would also be desirable to immediately add this
12 call record to the list of call records to be processed for that
13 day so that the customer may be immediately called. Additionally,
14 the owner of the card may telephone in to report the loss of the
15 credit card and therefore, it is not necessary to telephone him or
16 her. This customer's name may therefore be immediately removed
17 from the call list.

18 Accordingly, systems and methods have been developed, such as
19 the one disclosed in the Applicant's U.S. Patent No. 5,832,068,
20 which is fully incorporated herein by reference, that provide a
21 data processing system with real time data record updating and
22 dynamic data record exclusion. The dynamic data record excluder
23 of '068 Patent includes a unique data record identifier generator,
24 responsive to at least one received data record, for generating a
25 unique data record identifier. A data record index stores at
26 least a portion of the received data record and the generated

1 unique data record identifier. Unique data record identifiers may
2 be based on one or more of various data record processing elements
3 such as time, date, time of record download, customer account
4 number, download cycle, or data record batch number.

5 In addition, where the processing system maintains a single
6 "version" or location in which all data records are stored, the
7 received data records may be compared against previously received
8 data records to determine whether or not the same or previous
9 version of the received data record was previously received, in
10 which case the previous version is excluded and the new version is
11 retained to be processed presently or at a later time.

12 Such a dynamic data record excluder determines whether the
13 received data record was previously received by comparing at least
14 a portion of the received data record with data stored in the data
15 record index. If a data record referencing the same account
16 number was previously received, the previously received data
17 record is discarded, marked "to be excluded" and/or a data record
18 exclusion indicator is generated, and only the newest record will
19 be processed. A data record exclusion list is maintained in
20 response to the dynamic data record excluder, for storing the
21 generated data record exclusion indicators or the list of data
22 records to be excluded from processing.

23 However, the widespread use of computer networks has added
24 another layer of complexity to record exclusion systems. Today,
25 many companies and organizations utilize more than one call center,
26 each having its own computer telephony integration (CTI) system

1 for placing and receiving calls. While distributing call center
2 operations does provide certain advantages to a company, it also
3 provides a significant disadvantage with respect to call record
4 exclusion namely, an exclusion record generated by one CTI system
5 is not shared with the other distributed call center CTI systems.
6 Accordingly if a customer places an inbound call, which is handled
7 by a first call center and which results in the generation of an
8 exclusion record by that call center's CTI system, the customer
9 may still be called if the customer is the subject of a call
10 record slated for dialing by a dialer included in a CTI system at
11 another of the distributed call centers. Therefore, the customer
12 may still be called. This will result in unnecessary telephone
13 line costs and will reduce call center productivity.

14 Accordingly, what is needed is a system and method of
15 propagating exclusion or priority records between a plurality of
16 distributed, networked CTI systems so that an exclusion record or
17 a priority call record generated by one of the CTI systems is
18 provided to the remaining networked, distributed call centers. In
19 this manner, a generated exclusion record or priority call record
20 will be more likely to result in the exclusion or prioritization
21 of a specified call record by all of the networked call centers.

22 SUMMARY OF THE INVENTION

23 A system for propagating at least one exclusion record
24 maintained in an exclusion table by a computer telephony
25 integration (CTI) system at a first call center among a plurality

1 of networked distributed call centers is provided. Each of the
2 first call center and the distributed call center include a
3 computer telephony integration (CTI) system including a dynamic
4 record excluding system having an exclusion table. The first call
5 center and the distributed call centers are linked over a
6 computer network. The exclusion record propagation system
7 includes an exclusion record exporter and an exclusion record
8 importer running on each said CTI system. Each exclusion record
9 exporter prepares and sends transfer files, including exclusion
10 records to be distributed to the networked distributed call
11 centers, to defined directories at each desired destination CTI
12 system.

13 Each exclusion record importer is configured to search its
14 defined directory at periodic intervals to identify new transfer
15 files and to copy the exclusion record included in the transfer
16 files to the appropriate exclusion table in its dynamic data
17 record exclusion system.

18 A method of propagating at least one exclusion record
19 maintained in an exclusion table by a computer telephony
20 integration (CTI) system having a dynamic record excluder system
21 at a first call center among a plurality of distributed call
22 centers, wherein each distributed call center includes a computer
23 telephony integration (CTI) system having a dynamic record
24 excluder system including an exclusion table and wherein each
25 distributed call center is linked to said first call center over
26 a computer network, is also provided. The method begins by

1 maintaining at least one exclusion table in the first call
2 center's dynamic record excluder system. Each exclusion table is
3 configured to hold at least one exclusion record. Then, at
4 specified intervals, the exclusion table(s), including one or
5 more exclusion records, and a list of distributed call center CTI
6 systems to which the exclusion table(s) should be exported are
7 sent to an exclusion record exporter. At the exclusion record
8 exporter, the received exclusion table(s) are saved in a transfer
9 file. The transfer file is then sent to at least one of the
10 distributed call center CTI systems, where it is saved in a
11 defined directory.

12 Each distributed call center CTI system then searches its
13 defined directory to identify new files added to the directory.
14 If a new file is identified, then the exclusion records stored in
15 the transfer file are copied to an appropriate exclusion table
16 maintained in said distributed call center CTI system's dynamic
17 data record excluder system.

18 DESCRIPTION OF THE DRAWINGS

19 These and other features and advantages of the present
20 invention will be better understood by reading the following
21 detailed description, taken together with the drawings wherein:

22 Fig. 1 is a block diagram of a prior art dynamic record
23 excluder system;

24 Fig. 2 is a block diagram showing a plurality of networked
25 distributed call centers;

1 Fig. 3 is a block diagram of one networked distributed call
2 center system including a dynamic data record excluder system
3 according to the prior art and an exclusion record propagation
4 system according to the teachings of the present invention;

5 Fig. 4 is a more detailed block diagram showing the
6 components of an exclusion record exporter of the exclusion record
7 propagation system of Fig. 3;

8 Fig. 5 is a more detailed block diagram showing the
9 components of an exclusion record importer of the exclusion record
10 propagation system of Fig. 3; and

11 Fig. 6 is a flow chart showing a method of propagating
12 exclusion records among a plurality of networked call centers
13 according to the teachings of the present invention.

14 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

15 Turning now to the figures, a system and method of
16 propagating exclusion records throughout a plurality of networked,
17 distributed computer telephony integration (CTI) systems is
18 disclosed. The disclosed exclusion record propagation system and
19 method works in conjunction with a plurality of network CTI
20 systems, each having a dynamic record excluder system, such as the
21 one disclosed in commonly owned U.S. Patent No. 5,832,068.

22 Fig. 1 shows a dynamic record excluder system 10 according to
23 the teachings of the '068 Patent. The dynamic record excluder
24 system 10 includes one or more locations in which data records may
25 be stored. In such a system, it is not generally practical to

1 scan each and every data record storage location for previously
2 received data records for the same "account" or "matter" and
3 therefore, a data record exclusion list will be generated and
4 checked before any previously received and stored record is
5 processed.

6 The dynamic data record exclusion system 10 includes a unique
7 record identification generator 20 which receives data records 13
8 from a data record source and assigns a unique record
9 identification 30 to each data record. The unique data record
10 identification generator 20 utilizes a portion of the received
11 data record such as account number, telephone number or other
12 indicia which serves to uniquely identify a party, account, data
13 record etc., about which the data record refers. In addition to
14 the unique account information, the unique record identification
15 generator 20 may append additional information to generate the
16 unique data record identifier 22. The unique data record
17 identifier is appended to and/or included with the received data
18 record 13a as shown generally by 22, and provided to the dynamic
19 data record excluder 24 over path 23.

20 Upon receipt of the data record with embedded or appended
21 unique data record identifier 22, the dynamic data record excluder
22 24 scans data record index 26 utilizing one or more portions of
23 the unique data record identifier 22, such as the account number
24 portion 28, previously generated to determine if a previous
25 "version" of a data record for the same "account" was received
26 prior to receipt of the current record. If no match is found, the

1 dynamic record excluder 24 will store both the account number
2 portion 28, and the identification portion 30 of the unique data
3 record identifier in the data record index 26 for later reference
4 and searching.

5 If the dynamic data record excluder 24 discovers a matching
6 account number 28 or similar unique data record identification key
7 portion in the data record index 26, the dynamic data record
8 excluder 24 will retrieve the identification portion 30 of the
9 unique data record key stored in data record index 26 and store
10 both the account number 28 and the appended or separate
11 identification portion 30 in the record exclusion list 34.

12 If the dynamic record excluder 24 determines that there is no
13 data record to exclude, the data record with appended unique
14 identifier is transferred to a data record handler 32 which stores
15 the data record and appended unique record identifier in one or
16 more data record tables 40. The data record tables 40 may include
17 one master data record table 42 or more preferably, a plurality of
18 data record tables 44a-44c. This arrangement facilitates telephone
19 call record processing as is more fully disclosed in U.S. Pat. No.
20 5,495,523 assigned to the assignee of the present invention and
21 incorporated herein by reference.

22 If the dynamic record excluder 24 determines upon examining
23 or scanning the data record index 26 that there is a previous
24 entry with the same account number portion 28, the dynamic data
25 record excluder 24 proceeds to compare the identifier portion 30
26 stored in the data record index 26 with account number portion 28

1 to the just generated identifier portion 30 received from the
2 unique data record identification generator 20. If, for example,
3 the identification portion 30 is cycle number, batch number, time,
4 or the like, the dynamic data record excluder will determine that
5 the earlier version of the received data record should be excluded
6 and will generate an indication that a particular account number
7 with a predetermined identifier portion 30 should be excluded from
8 any further processing, and store the account number 28 and
9 identification portion 30 in the exclusion list 34.

10 The dynamic data record exclusion system 10 will, at a pre-
11 determined time and/or under control of one or more users 50a-50c,
12 initiate the data record processor 36 to process one or more data
13 records. Record processor 36 will request one or more data records
14 from record handler 32. Data record handler 32 will retrieve one
15 or more data records from one or more data record tables 44a-44c.

16 Once the data record is retrieved, data record handler 32
17 will examiner or search the data record exclusion list 34 for a
18 matching account number portion 28. If the data record handler 32
19 locates a matching account number portion 28 in the record
20 exclusion list 34, the data record handler will mark the
21 previously retrieved data record as "excluded from processing" and
22 will place the account number 28 and identification portion 30 in
23 the record exclusion list 34.

24 One exemplary embodiment of the present invention is directed
25 for use with a telephone call processing system such as a UNISON®
26 call processing system available from Davox Corporation of

1 Westford, Mass., which description is incorporated herein by
2 reference. The present invention is also usable with other call
3 record processing systems as well as other data and record
4 processing systems.

5 Turning now to Figs. 2-5, a plurality of distributed call
6 centers 60 are shown networked with one another over a computer
7 network 62 which may be a local area network (LAN), wide area
8 network (WAN), global computer network such as an internet
9 connection, intranet connection, or other method of connecting
10 multiple systems together. Each call center 60 interfaces with
11 computer network 62 via at least a data connection 64 and a
12 network interface 68.

13 Each distributed call center 60 includes, among other systems
14 and components, a computer telephony integration (CTI) system 70,
15 having a dynamic data record exclusion system 10, as described
16 above. The dynamic data record exclusion system 10 includes at
17 least one record exclusion table 40 for storing at least one
18 exclusion record as described previously.

19 Each distributed call center CTI system 70 includes various
20 CTI system hardware and software components 72, which are well
21 known to those skilled in the art of computer telephony
22 integration, including one or more of a dialer 74, such as a
23 predictive or automated dialer, and an automatic call distributor
24 (ACD) 76, which are configured to interface a plurality of
25 customers using telephone trunk lines 4 with a plurality of CTI
26 system users 50, such as call center agents.

Each distributed call center CTI system 70 also includes an exclusion record propagation system 80 according to the teachings of the present invention. Each exclusion record propagation system 80 includes an exclusion record importer 90 and an exclusion record exporter 100, which interface the dynamic record exclusion system 10 of its corresponding CTI system 70. The exclusion record importer 90 and exclusion exporter 100, in connection with the dynamic data record exclusion system 10, facilitate the transfer of exclusion records generated by the dynamic data record exclusion system 10 between the plurality of distributed call centers 60.

The exclusion record exporter 100 includes a transfer file 102 for receiving and storing at least one exclusion table including at least one exclusion record generated by and to be exported from the dynamic data record exclusion system 10 of one call center CTI system 70. Also included in the exclusion record exporter 100 is a file transfer engine 104, for transferring a transfer file 102 to at least one other distributed call center 60 CTI system.

Each exclusion record importer 90 includes a defined directory 92, for receiving at least one transfer file 102 transferred to the exclusion record importer 90 from at least one exclusion record exporter 100 of another dynamic data record exclusion system 10 of a CTI system 70 associated with a different, networked call center 60. The exclusion record importer 90 also includes an import engine 94 for searching the

1 defined directory 92 to identify if the defined directory includes
2 one or more new transfer files 102.

3 In one preferred embodiment of the invention, the exclusion
4 record propagation system is implemented in software using a
5 plurality of tables and scripts. Figs. 4 and 5 show the tables
6 and scripts associated with one software implementation of the
7 invention. The transfer engine 104 included in the exclusion
8 record exporter 100 (Fig. 4) is comprised of three tables 106-110
9 and three scripts 112-116.

10 The first table is a call center list table 106. The call
11 center list table will contain a list of distributed call centers
12 60 to which exclusion records should be exported by the exclusion
13 record propagation system 80. The second table is a control table
14 108. The control table 108 contains a list of exclusion tables 40
15 that should be replicated to the other distributed call centers 60
16 networked to the first call center over the computer network 62.
17 The control table 108 also includes an indication of a last
18 exclusion record that was exported. The third table is an export
19 temporary table 110. The export temporary table 110 contains at
20 least one exclusion record that should be exported to at least one
21 additional distributed call center 60. A Sybase Query Language
22 (SQL) statement is executed to insert records into the export
23 temporary table 110 from the exclusion table(s) 40 of the dynamic
24 data record exclusion system 10 included in the first call center
25 CTI system 70. Then, a Bulk Copy (BCP) command will be executed
26 to copy the exclusion records included in the export temporary

1 temporary table 110 into the transfer file 102. As will be
2 explained below, the transfer file 102 will then be prepared for
3 transfer to at least one additional distributed call center 60.

4 The first script included in the software-implemented file
5 transfer engine 104 is a main script 112. The main script 112
6 uses the control table 108 to run an export script 114 for each
7 exclusion table 40 that should be copied to a transfer file 102.
8 The main script will also run a file transfer script 116, which
9 will copy the files created by the export script 114 to a defined
10 directory in each distributed call center 60 CTI system to which
11 the exclusion records should be exported.

12 The export script 114 receives, as a parameter, the name of
13 an exclusion table to be exported as well as a record number of
14 the last copied exclusion record. The export script 114 will then
15 clear the export temporary table 110 and insert and new exclusion
16 records found in the exclusion table 40 into the export temporary
17 table 110. The export script 114 will then copy the exclusion
18 records from the export temporary table 110 to the transfer file
19 102 using defined naming standards. In one preferred embodiment,
20 the exclusion records copied from the export temporary table 100
21 are copied as ASCII files.

22 In one preferred embodiment, the file transfer script 116
23 includes an FTP (file transfer protocol) script which will
24 transfer each file in transfer file 102 created by the export
25 script to each of the distributed call centers 60 in the call
26 center list table 106 using file transfer protocol, which is one

1 preferred method of transferring files over a global computer
2 network, such as the Internet. The FTP script will copy the
3 transfer files in a defined directory 92 included in the exclusion
4 record propagation system 80 included in each distributed call
5 center 60 included in the call center list table 106.

6 The exclusion export process may be initiated at pre-
7 determined intervals using, for example, a clock driven signal. In
8 one preferred embodiment of the invention, which is utilized with
9 the dynamic data record exclusion system 10 described above, the
10 exclusion export process will be initiated by adding an entry in
11 the cron program, which will execute the main script 112 at
12 periodic intervals, such as every thirty minutes.

13 In one preferred embodiment, the import engine 94 included in
14 each exclusion record importer 90 is also implemented using
15 software and comprises a search script 95, an import script 97,
16 and an import temporary table 99. The search script 95 will
17 search for new files containing exclusion records in the defined
18 directory 92 associated with the exclusion record importer 90.
19 Each time the search script 95 identifies a new file containing
20 exclusion records, it will execute the import script 97. The
21 import script 97 receives, as a parameter, the name of the new
22 file found by the search script 95 in the defined directory 92.
23 Each transfer file will include a header record defining an
24 exclusion table to which the exclusion records included in the
25 transfer file should be added. Each exclusion record included in
26 an identified file will be copied from the transfer file to the

1 import temporary table 99. Thereafter, the exclusion records
2 copied to the import temporary table 99 will be copied to the
3 appropriate exclusion table 40 included in the dynamic data record
4 exclusion system 10 at the call center CTI system 70.

5 Like the exclusion export process, the exclusion import
6 process will, preferably, be performed at periodic intervals, such
7 as every fifteen minutes. When used in conjunction with the
8 dynamic data record exclusion system 10 described above, the
9 initiation of the exclusion import process will be made using an
10 entry in the dynamic data record exclusion system's cron program.

11 One preferred embodiment of the scripts used for exclusion
12 record export and import are provided in Appendix A.

13 A method for propagating exclusion records between a
14 plurality of distributed call centers is also provided. Each of
15 the distributed call centers includes a computer telephony
16 integration (CTI) system having a dynamic data record exclusion
17 system as described above. The dynamic data record exclusion
18 system includes at least one exclusion table holding at least one
19 exclusion record to be propagated amongst the plurality of
20 distributed call centers, which are networked over a computer
21 network. The method 200 begins by maintaining at least one
22 exclusion table in a dynamic data record exclusion system at a
23 first of the distributed call centers, step 210. Each exclusion
24 table includes at least one exclusion record. Next, at step 220,
25 at least one exclusion table including at least one exclusion
26 record and a list of distributed call center CTI systems to which

1 the at least one exclusion table should be exported is sent, at
2 specified intervals, to an exclusion record exporter.

3 Once received at the exclusion record exported, the at least
4 one exclusion table including at least one exclusion record is
5 saved in a transfer file, step 230. Thereafter, the transfer file
6 is transferred to a defined directory at at least one distributed
7 call center CTI system, step 240.

8 The method of propagating exclusion records also includes the
9 step of searching, using the exclusion record importer, the
10 defined directory in each distributes CTI system to identify is at
11 least one new transfer file has been transferred to the defined
12 directory, step 250.

13 Finally, said at least one exclusion table including at least
14 one exclusion record stored in an identified new transfer file is
15 copied to an appropriate exclusion table maintained in a dynamic
16 data record exclusion system included in the distributed call
17 center CTI system at each distributed call center to which the
18 exclusion records are desired to be transferred, step 260.

19 In the preferred embodiment, all of the distributed call
20 centers are networked using a global computer network, such as the
21 Internet. As such, one preferred method for transferring files
22 across the Internet is using file transfer protocol (FTP)
23 accordingly, the transfer of files between the plurality of
24 distributed call center CTI systems is preferably accomplished
25 using FTP.

26 Accordingly, the disclosed system and method allows exclusion

1 records, which are generated at one of a plurality of distributed
2 call centers including CTI systems to be readily propagated to the
3 remaining call center CTI systems in the remaining plurality
4 of distributed call centers. Therefore, if an exclusion record is
5 generated at a first of the plurality of distributed call centers,
6 the exclusion records will be shared amongst all of the
7 distributed call centers, thus preventing a dialer at any one of
8 the distributed call centers from dialing on a call record that is
9 the subject of an exclusion record generated at any of the
10 distributed call centers.

11 Modifications and substitutions by one of ordinary skill in
12 the art are considered to be within the scope of the present
13 invention which is not to be limited except by the claims which
14 follow.

15 What is claimed is: